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Notice of Allowability	Application No.	Applicant(s)	
	10/604,051	ENICHEN ET AL.	
	Examiner	Art Unit	
	John H. Le	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendment filed 03/28/2005.
2. ☒ The allowed claim(s) is/are 11-15, 18, 19 and 22-28.
3. ☒ The drawings filed on 24 June 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
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Response to Amendment

1. Applicant's amendment filed 03/28/2005 has been entered and carefully considered.

Claims 11, 14, 22, and 23 have been amended.

Claims 24-28 have been added.

Claims 1-10, 16-17, and 20-21 have been cancelled.

Reasons for Allowance

2. Claims 11-15, 18-19, and 22-28 are allowed.
3. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 11, none of the prior art of record teaches or suggests the combination of a method of evaluating image quality of an electron beam lithography tool, wherein the method comprising the steps of: generating a test array of test pattern cell exposures at a plurality of sub-field test positions in an exposure field, wherein each test pattern cell exposure within a given test array occurs under a different set of lithography tool test corrections; evaluating image quality based on the test arrays; and applying a tool correction for a selected sub-field position within the exposure field based on recorded test corrections for the sub-field test positions, including: implementing a two-dimensional, third-order polynomial equation for each recorded test correction; calculating a set of correction coefficients for each two-dimensional, third-order polynomial equation; and applying the set of correction coefficients to determine the tool correction for the selected sub-field position. It is these limitations as they are

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claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Regarding claim 22, none of the prior art of record teaches or suggests the combination of a computer-readable storage medium having stored therein instructions for performing a method, wherein the method comprising the steps of: determining a lithography tool correction for a selected sub-field position within an exposure field of the lithography tool based on recorded test corrections for a plurality of sub-field test positions including: implementing a two-dimensional, third-order polynomial equation for each recorded test correction; calculating a set of correction coefficients for each two-dimensional, third-order polynomial equation; and applying the set of correction coefficients to determine the lithography tool correction for the selected sub-field position. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Regarding claim 23, none of the prior art of record teaches or suggests the combination of a system for optimizing lithography tool image quality, wherein the system comprising: means for determining a tool correction for a selected sub-field position within an exposure field of a lithography tool based on recorded test corrections for a plurality of sub-field test positions, the determining means including: means for implementing a two-dimensional, third-order polynomial equation for each recorded test correction; means for calculating a set of correction coefficients for each two-

dimensional, third-order polynomial equation; and means for applying the set of correction coefficients to determine the tool correction for the selected sub-field position. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John H Le whose telephone number is 571-272-2275. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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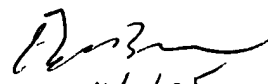
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

John H. Le

Patent Examiner-Group 2863

April 5, 2005

BRYAN BUI
PRIMARY EXAMINER


4/11/05